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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,398	11/08/2001	Hyun Jung Kim	0630-1349P	5653
2292	7590	11/12/2003	EXAMINER LEE, BENNY T	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ART UNIT 2817	PAPER NUMBER

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

☐ This application has been examined ☒ Responsive to communication filed on 12 Aug 2003 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire Two (2) month(s), \_\_\_\_\_ days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 5. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____   |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-20 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☒ Claims 1-17; 18-20 are allowed.
4. ☐ Claims \_\_\_\_\_ are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☒ The proposed additional or substitute sheet(s) of drawings, filed on 12 Aug 2003, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☒ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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The substitute specification filed 12 August 2003 has been reviewed, found acceptable and has replaced the original specification. The following objections pertain to the substitute specification.

This application is in condition for allowance except for the following formal matters:

**In the Specification:**

The disclosure is objected to because of the following informalities: At all occurrences throughout the specification, note that "microwave" (singular) should correctly be rewritten as --microwaves-- (plural) for a proper characterization: For example, page 5, paragraph [0025]. Page 1, paragraph [0004], third line, note that "lights by" should be rewritten as --light from--; fourth line, note that --which are excited-- should be inserted prior to "by" for a proper characterization. Page 2, paragraph [0006], second & third lines therein, note that --for-- should precede "boosting" & "refrigerating", respectively for clarity. Page 3, paragraph [0014], sixth & seventh lines, and page 5, paragraph [0030], third line, note that "by generating a plasma by" should be rephrased as --resulting from a plasma which is excited by-- for a better characterization at each occurrence. Page 5, paragraph [0028], note that "The" should be rewritten as --As shown in Fig. 2, the-- and --(also see Fig. 3)-- should follow "50" in the second line of the paragraph. Page 5, paragraph [0029], note that --as shown in Figs. 2 & 3-- should follow "90" for clarity. Page 5, paragraph [0030], third line, note that --(also see Fig. 3)-- should follow "80". Page 6, paragraph [0034], note that "and, a" should be rewritten as --A--. Pages 6 & 7, paragraph [0039], note that it is unclear whether the recitation of "three slots (63a'/63a'") is consistent with what is

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depicted in Fig. 3. Clarification is needed. Page 7, paragraphs [0042], [0043], [0044] & [0045], note that "63a" should be deleted at each occurrence, as being unnecessary. Page 8, paragraph [0047], note that --as shown in Fig. 2-- should follow "50" for clarity of description..

Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that the following reference labels need description relative to the corresponding drawing figures: fig. 3 (50, 60, 63, 85, 90). Appropriate correction is required.

**In the Drawings:**

The drawings are objected to because in Figs. 3, 4A, 4B, 4C, reference label (63') needs to be provided for each corresponding element depicted; In fig. 3, reference label --63a'-- needs to be associated with each corresponding element depicted . A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

**In the Claims:**

The following claims have been found objectionable for reasons set forth below:

In claim 1, sixth paragraph, & claim 18, fifth paragraph, note that "by generating a plasma by" should be rephrased as --resulting from a plasma excited by-- at each occurrence for a proper characterization.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

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A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Claims 1-17; 18-20 are allowable over the prior art in that the closest prior art to Simpson ('865) fails to disclose a lighting apparatus having a resonator and a conical shape waveguide disposed within the internal domain of the resonator (i.e. cls 1-17) or a lighting apparatus having a resonator and a waveguide each having extending flanges for connection to each other as well as the waveguide being within the internal domain of the resonator (i.e. cls 18-20).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is (703) 308 4902.

A handwritten signature in cursive script, reading "Benny Lee". The signature is written in dark ink on a white background.

BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817

B. Lee

October 31, 2003